WHAT IS CLAIMED IS:

1. A gas analyzing method, comprising:

a) filling a flame cell with a sample gas;

b) burning a mixture within said flame cell, said mixture including a fuel and an oxidant present in proportions such that said burning creates a diffusion flame including an inner ignition zone and a main reaction zone;

c) measuring a temperature of said diffusion flame; and

d) calculating a concentration of combustible gases contained in said sample of gas using said temperature.

2. The method of claim 1 wherein said mixture further includes a substantially neutral gas.

3. The method of claim 2 where in said fuel is hydrogen, said oxidant is oxygen and said substantially neutral gas is nitrogen.

4. The method of claim 3 wherein said oxygen content of said mixture is in the range of 9.4% to 10.5%;

5. The method of claim 1, further comprising:

e) burning a second mixture within said flame cell, said second mixture including said fuel, thereby creating a second diffusion flame having a main reaction zone and being incapable of supporting an inner ignition zone;

f) measuring a second temperature of said second diffusion flame;

g) calculating a concentration of oxygen in said sample, said calculating including comparing said temperature and said second temperature.

6) The method of claim 5 wherein said second mixture includes said oxidant.

7. A gas analyzing apparatus, comprising:

a flame cell;

filling means for filling said flame cell with a gas sample;

providing a flammable mixture, said mixture including a fuel and an oxidant;

burning means for burning said mixture inside said flame cell, thereby creating a diffusion flame including a main reaction zone and an inner ignition zone;

measuring means for measuring a temperature of said diffusion flame; and

combustible gas concentration calculating means using said temperature for determining a concentration of combustible gases in said gas sample.

8. The gas analyzing apparatus of claim 7 wherein said mixture further includes a substantially neutral gas.

9. The gas analyzing apparatus of claim 8 wherein said fuel is hydrogen, said oxidant is oxygen and said gas is nitrogen.

10. The gas analyzing apparatus of claim 9 wherein said oxygen content of said mixture is in the range of 9.4% to 10.5%.

11. The gas analyzing apparatus of claim 7, further including:

providing a second mixture, said second mixture including said fuel;

using said burning means to burn said second mixture, thereby creating a second diffusion flame having a main reaction zone and being incapable of supporting an inner ignition zone;

using said measuring means to measure a second temperature of said second diffusion flame;

oxygen concentration calculating means for determining a concentration of oxygen in said sample, said oxygen concentration calculating including comparing aid second temperature with said temperature.

12. The apparatus of claim 11 wherein said second mixture includes said oxidant.

13. A gas analyzing device, comprising:

a flame cell filled with a gas sample;

a burner tube having a first and a second end, said first end being located inside said gas filled flame cell, and said burner tube being supplied via said second end with a mixture including a fuel and an oxidant;

a diffusion flame created inside said flame cell by burning said mixture at said first end of said burner; said diffusion flame having a main reaction zone and an inner ignition zone;

a temperature sensor located near said diffusion flame capable of providing a temperature of said diffusion flame,

a calculator capable of using said temperature to determine a concentration of combustible gases contained in said sample.

14. The gas analyzing device of claim 13 wherein said mixture further includes a substantially neutral gas.

15. The gas analyzing device of claim 14 wherein said fuel is hydrogen, said oxidant is oxygen and said gas is nitrogen.

16. The gas analyzing device of claim 15 wherein said oxygen content of said mixture is in the range of 9.4% to 10.5%.

17. The gas analyzing device of claim 13 further including:

a second mixture supplied to said second end of said burner, said second mixture including said fuel;

a second diffusion flame created inside said flame cell by burning said mixture at said first end of said burner; said flame having a second main reaction zone and being incapable of supporting a second inner ignition zone;

a second temperature of said second diffusion flame obtained by said temperature sensor; and

a determination of a concentration of oxygen in said sample by comparing said second temperature and said temperature.

18. The gas analyzing device of claim 17 wherein said second mixture further includes an oxidant.